IDENTIFICATION OF GENES ALTERED IN MULTIPLE MYELOMA

Abstract of the Invention

This invention provides a method of determining a chromosomal breakpoint in a subject suffering from multiple myeloma which comprises steps of: (a) obtaining a DNA sample from the subject suffering from multiple myeloma; (b) determining whether there is J and C disjunction in the immunoglobulin heavy chain gene in the obtained DNA sample; (c) obtaining a genomic library having clones which contain genomic DNA fragments from the DNA sample which shows positive J and C disjunction; (d) selecting and isolating clones of the obtained library which show positive hybridization with a probe which is capable of specifically hybridizing with the C but not the J region of the immunoglobulin heavy chain gene; (e) preparing fluorescent probes from the genomic DNA fragments of the isolated clones from step (d); (f) hybridizing said fluorescent probes with metaphase chromosomes; and (g) determining the identity of the chromosomes which are capable of hybridizing to said fluorescent probes, wherein the identification of a chromosome other than chromosome 14 would indicate that the chromosomal breakpoint is between chromosome 14 and the identified chromosome, thereby determining a chromosomal breakpoint in a subject suffering from multiple myeloma. This invention also provides the identified gene altered by a chromosomal breakpoint and various uses thereof.